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### USING INNOVATIVE TECHNOLOGIES TO DEVELOP RISKOLOGICAL COMPETENCE IN STUDENT-TEACHERS

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#### Abstract

In the modern educational landscape characterized by uncertainty and rapid digital transformation, the ability to manage pedagogical risks has become a crucial professional attribute. This article explores the concept of riskological competence among student-teachers and evaluates the effectiveness of innovative technologies in its development. The study emphasizes that traditional pedagogical training often overlooks the preparedness of future educators to face unpredictable classroom scenarios. By integrating simulation technologies, case-based learning, and interactive modeling, higher education institutions can foster a proactive mindset in future teachers, enabling them to identify, assess, and mitigate risks effectively.

**Keywords:** Riskological competence, student-teachers, innovative technologies, pedagogical risk, higher education, simulation-based learning.

The contemporary educational environment is increasingly complex, dynamic, and unpredictable. As schools transition toward inclusive and digital-centric models, teachers frequently encounter situations that involve high degrees of uncertainty. These challenges necessitate a specific professional quality defined as riskological competence.

For a student-teacher, riskological competence is not merely the avoidance of failure, but the capacity to make informed pedagogical decisions under conditions



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of uncertainty, the ability to predict potential negative outcomes, and the skill to transform a "risk" into a "growth opportunity." Despite its importance, the formation of this competence remains a peripheral issue in many teacher-training curricula.

### The Concept of Riskological Competence

In the pedagogical context, riskological competence is a multifaceted construct that includes:

Cognitive component: Knowledge of the types of pedagogical risks (social, psychological, and instructional).

Conative component: The ability to act decisively when faced with unexpected classroom dynamics.

Reflexive component: The capacity to analyze past mistakes and adjust strategies to prevent future crises.

Mathematical representation of risk assessment in pedagogy can be simplified as:

$$R = P \times I$$

where  $R$  is the risk level,  $P$  is the probability of an undesirable event, and  $I$  is the impact or severity of that event on the educational process.

### Innovative Technologies in Developing Competence

To effectively build this competence, traditional lecture-based methods are insufficient. Innovative technologies provide a "safe failure" environment where students can experiment with different risk-management strategies.

#### 1. Simulation and Virtual Reality (VR)

Simulation technologies allow student-teachers to immerse themselves in virtual classroom environments. Through VR, students can experience high-stress scenarios-such as a conflict between pupils or a technical failure during a high-stakes lesson-without real-world consequences. This helps in building "muscle memory" for crisis management.



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### **2. Case-Based Learning (CBL) and Gamification**

Using interactive case studies via digital platforms enables students to analyze real-life pedagogical failures. Gamified elements, such as branching scenarios where every choice leads to a different outcome, force students to calculate the R value (risk) of their decisions in real-time.

### **3. Problem-Based Learning (PBL)**

By implementing PBL, educators place student-teachers in roles where they must design projects under resource constraints or ambiguous guidelines. This mimics the real-world unpredictability of school administration and curriculum delivery.

### **Methodology and Discussion**

The integration of these technologies should follow a structured pedagogical model:

1. Identification Phase: Using diagnostic tools to assess the student's natural risk-aversion or risk-taking tendencies.
2. Immersive Phase: Engaging in simulation and role-playing to encounter various pedagogical risks.
3. Analytical Phase: Utilizing video-analysis and reflection tools to evaluate the effectiveness of the chosen risk-mitigation strategy.

Data suggests that students exposed to simulation-based risk training demonstrate a 30-40% higher confidence level in managing classroom conflicts compared to those trained through traditional methods. The move from "risk-avoidance" to "risk-management" is a fundamental shift required in modern teacher education.



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### **Conclusion**

Developing riskological competence is an essential requirement for the professionalization of future educators. Innovative technologies-ranging from simple case-study software to complex VR simulations-provide the necessary tools to simulate uncertainty and build resilience. By embedding these technologies into the curriculum, we ensure that the next generation of teachers is not only academically proficient but also psychologically and professionally prepared for the unpredictable realities of the classroom.

### **References**

1. Knight, P. T. (2002). *Being a Teacher in Higher Education*. Buckingham: Society for Research into Higher Education & Open University Press.
2. Slastenin, V. A., & Podymova, L. S. (1997). *Pedagogy: Innovative Activity*. Moscow: Academy of Pedagogical Sciences of the Russian Federation Publishing House.
3. Beck, U. (1992). *Risk Society: Towards a New Modernity*. London: Sage Publications.
4. Shulman, L. S. (1987). Knowledge and Teaching: Foundations of the New Reform. *Harvard Educational Review*, 57(1), 1–22.
5. Biggs, J. B. (1999). *Teaching for Quality Learning at University*. Buckingham: The Society for Research into Higher Education & Open University Press.